



U.S. AIR FORCE

Air Force Agency for Modeling & Simulation

C4ISR Visualization Center (CVC) Capabilities Brief



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Director

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**DEPUTY CHIEF OF STAFF
WARFIGHTING INTEGRATION**
AF/XI Lt Gen Hobbins 695-6324
AF/XI-2 Mr. Thomas (SES) 697-1605

Col (S) Bartels 695-6829

AF/XIE
Executive Services

Maj Gen 697-

AF/XIC
Director of C4ISR
Infostructure

Col Quesinberry 588-
6161 AF/XICA
Airborne Integration

Col Besson 588-
6151 AF/XICC
Ground Integration

Lt Col Phillips 614-
AF/XICI
Information Assurance
Integration

Col Slavec 588-6166
AF/XICS
Space & Enterprise
Integration

Col Kovach DSN 779-6571
AF Communications
Agency

Col Jakowatz 428-1544
AF Frequency
Management Agency

Maj Gen(Sel) Pow 695-1833

AF/XII
Director of C4ISR
Integration

Mr Cawthon 588-2743

AF/XIIV
Innovation

Col Malone 588-5011

AF/XIII
C4ISR Integration,
Concepts & Policy

Maj Gen Crawford DSN 574-3271

AFC2ISR Center

Mr Tillotson (SES) 695-1839

AF/XIW
Director of Architecture
and Operational Support
Modernization

Wg Cdr Featherstone 698-6184

AF/XIWA
Architecture &
Technology

Col Citizen 588-5060

AF/XIWM
Modeling and
Simulation

Lt Col Harvey 588-6315

AF/XIWS
Alignment and
Assessment

Col Votipka DSN 970-5722

AF Agency for
Modeling & Simulation

Col Gregory 697-3943

AF/XIP
Director of
Resource Planning

Col Payne 695-4442

AF/XIPP
Comm & Info Panel

Lt Col Hanlin 588-5078

AF/XIPR
Programming &
Analysis

Mr Scott 697-1308

AF/XIPS
Planning & Joint Matters

As of 9 Jul 04



XI - XIW - AFAMS Mission Relationship

- **XI Mission:** C4ISR integration; Close the seams between, engage, and assess by integration of manned, unmanned, and space systems
- **XIW Mission Area:** C4ISR operational, system & technical architecture; policy, analysis
- **AFAMS Mission Area:** Full-spectrum Air Force M&S
 - C4ISR, operations, training, policy, analysis, S&T, acquisition, T&E, logistics, C4ISR visualizations and demonstrations, etc.

AFAMS is the AF top-level leader, integrator, and facilitator for Air Force Modeling and Simulation

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Air Force Agency for Modeling and Simulation, Orlando Florida

“Advancing Air Force Modeling and Simulation”

Role

Air Force lead for translating policy/direction into effective M&S capabilities integrated across the Air Force and with the rest of the Department of Defense

Chain of Command

- AF Chief of Staff
- AF/XI
- AF/XIW
- AFAMS

People

- 21 Military
- 16 Civilians
- 49 Contractors
 - 86 Total

Liaisons

- | | |
|---------|---------|
| • AFRC | • DMSO |
| • AFRL | • NSA |
| • AF/XO | • SOCOM |

Laying the Foundation

- M&S Foundations
- Databases/Repositories
- Standards/Coord Tools
- Architectures/Reqs
- AF M&S Strategy

Warfighter Applications

- Trng/Msn Rehearsal/Decision Spt
- AF M&S Training Toolkit
- Distributed Mission Operations
- Accelerated Acquisition
- Concept Initiatives/Demos
- Experiments/Tech Transition

Building the Community

- Publicizing M&S Story
- Education/Outreach
- Prof Development
- Adv Distr Learning
- Community Forums

Concept Visualization

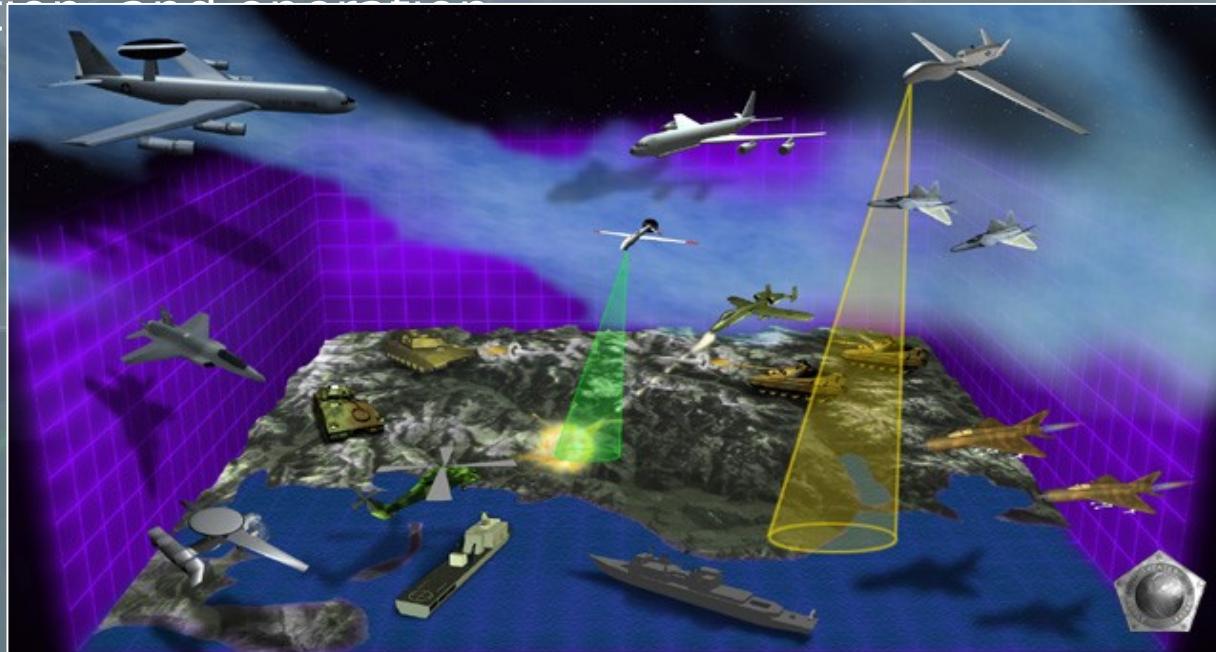
- Portal into M&S Exercises & Activities
- C4ISR Demos and Trials
- New Technology Demos



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CVC Mission

- Provide a venue to showcase the outstanding work being done in the field (outside the Pentagon) to define/identify required C4ISR capabilities, and their development, acquisition and operation.



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CVC Mission

- By providing visualizations and demonstrations of C4ISR systems and operational capabilities to senior military and government decision makers and the USAF and DoD officers supporting C4ISR programs.

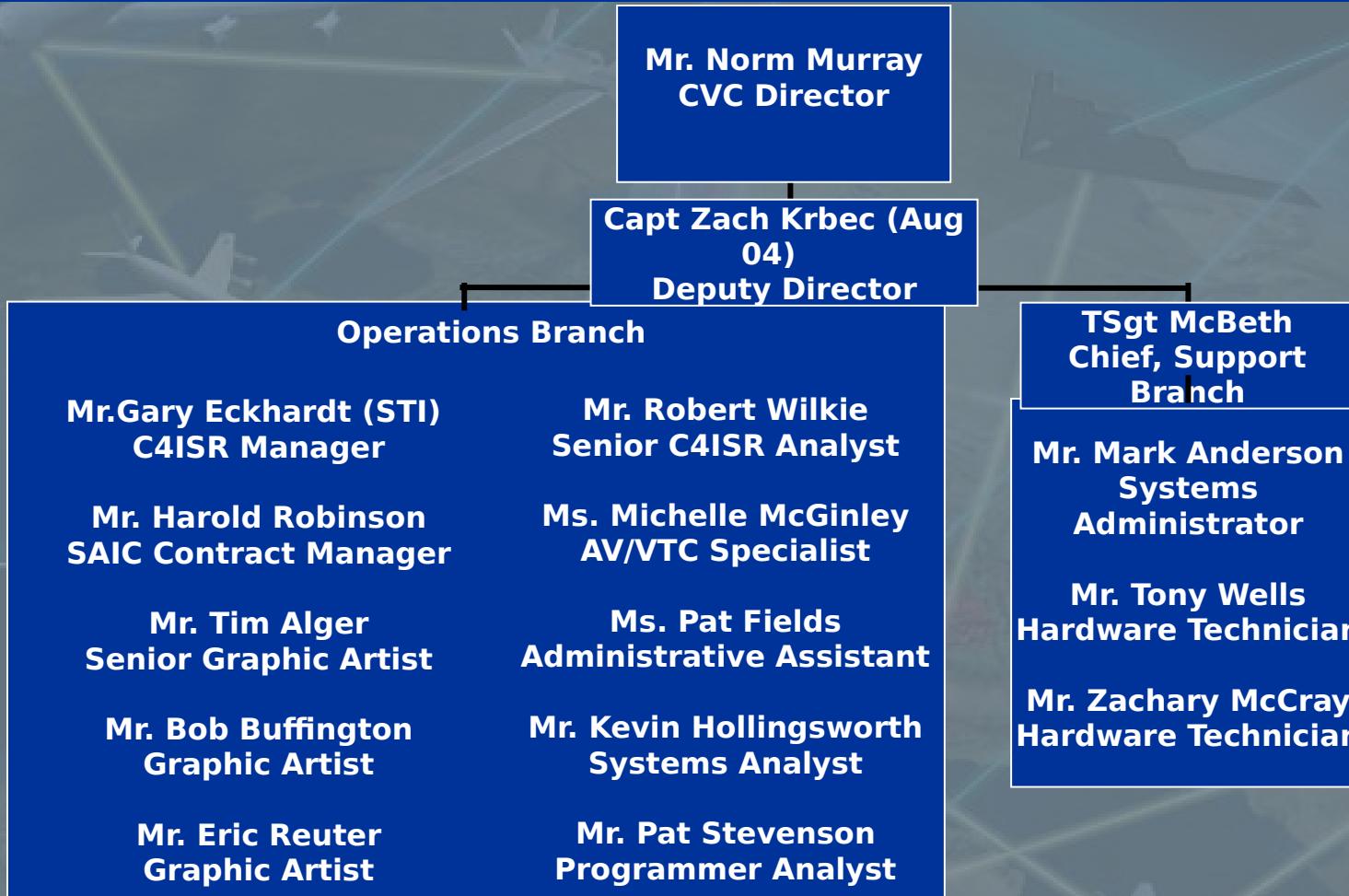


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CVC Personnel



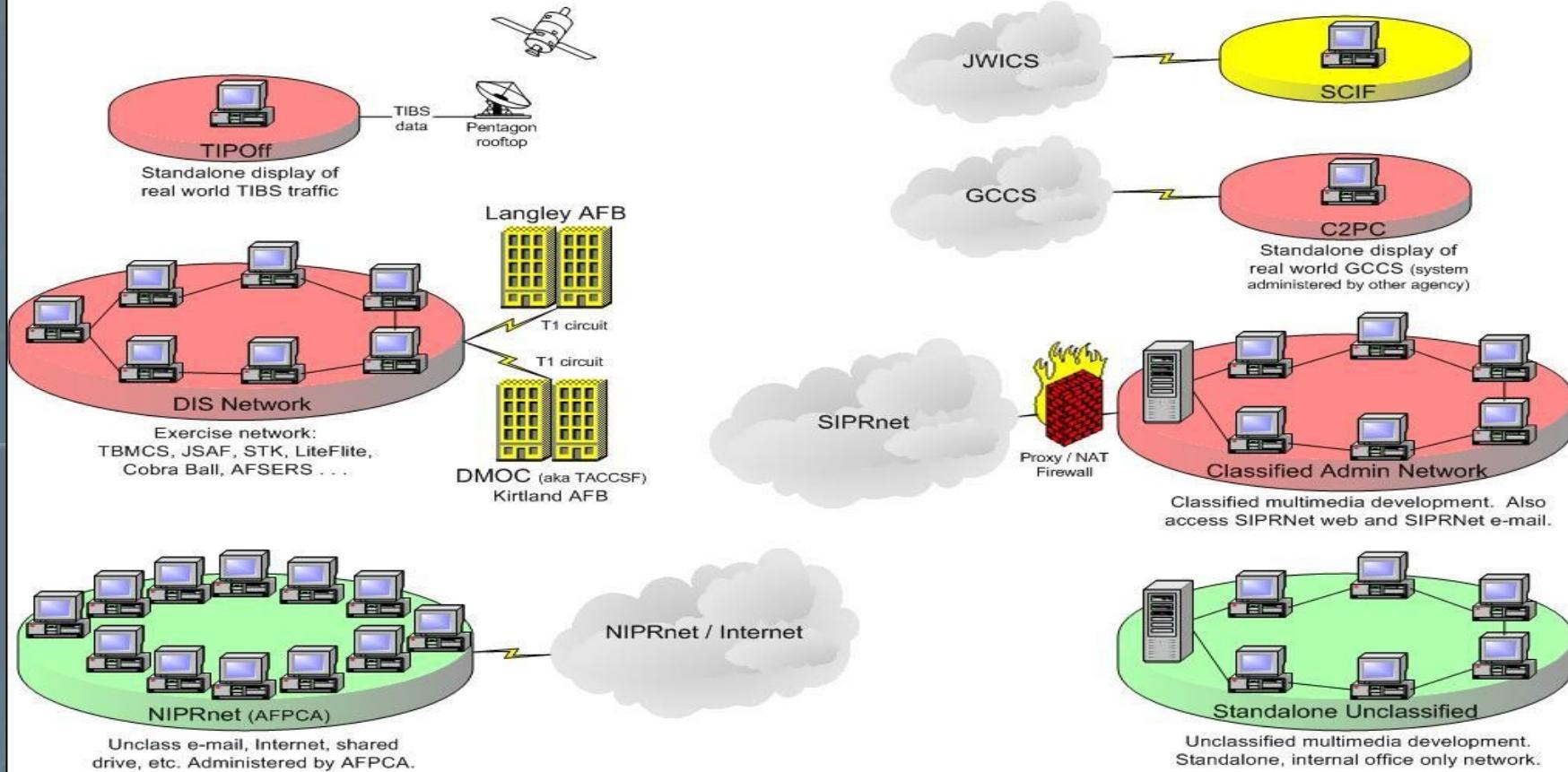
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CVC Infrastructure/Networks

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CVC Systems A Logical (and simple) Display



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CVC Infrastructure/Systems

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Constant Vision
Constant Sentinel
Emerging & Real World Systems
C2P
CJIT
IWS
TIBS
TRAP
SIPRNet
JWIC
S TBMC
S IWPC
(Future)

CREATIVE TOOLS
Maya
Adobe Suite
Terrex
Curious World
Maps

VTC

AFSERS
Cobra Ball
EADSIM
VBM
S JSAF
Liteflite
Mak Stealth
MoD Stealth
Satellite Tool Kit
Mak Logger
DIS Mgt Tools
HLA Mgt Tools



I n t e g r i t y - S e r v i c e - E x c e l l e n c e



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CVC Mission Areas

- **Exercise and Experiment Support**
- **Demonstrate Emerging Technologies**
- **Visualizations/3-D Graphics**



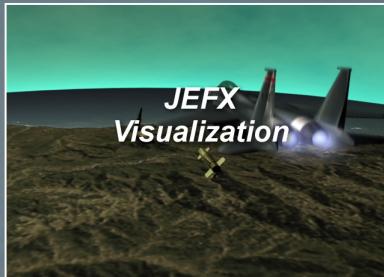
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Exercise & Experiment Support

JEFX 03-04-05-06
Romeo Sands 06
Global Engagement 00
UPEC 03-03-04
Desert Fury Version 03-02
Virtual Eng Feb 04, Nov 03, Oct 03
War Games 03

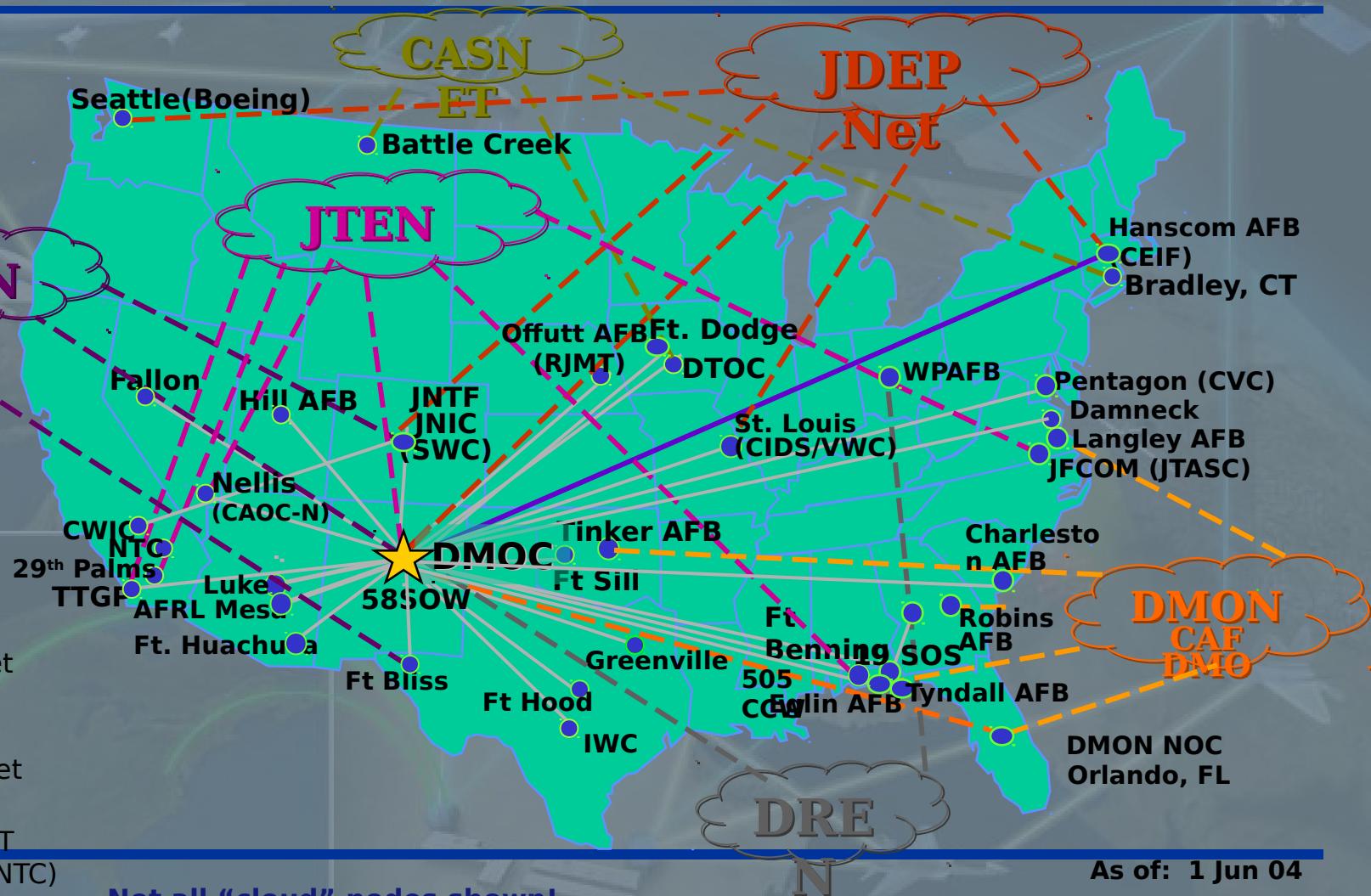


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DMOC Networks



Not all “cloud” nodes shown!

As of: 1 Jun 04



Virtual Flag VTC

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VF04-3 VTC between CSAF and AF/XI on 5 May 2004; some of the participants included:

AFAMS/CVC Gallery (Pentagon):

- *Gen Jumper (CSAF)*
- *Lt Gen Sherrard III (AF/IRE)*
- *Mr Thomas (AF/XI-2)*
- *Maj Gen Lorenz (SAF/FMB)*
- *Maj Gen Mentemeyer (AF/A-XO)*
- *Maj Gen Sullivan (AF/XP-MA)*
- *Mr. Manclark (AF/TE)*
- *Brig Gen Power (AF/XII)*
- *Brig Gen Peterson (AF/XOO)*

ACC:

- *Lt Gen Wright (ACC/CV)*
- *Col Yates (ACC/ADO)*



DMOC Kirkland AFB:

- *LT Gen Hobbins (AF/XI)*
- *Col Votipka (AFAMS/CC)*
- *Lt Col Weigand (DMOC/CC)*
- *Exercise attendees*

CAOC-N Nellis AFB:

- *Maj Gen Woods*

Chief's vision for DMO



JEFX

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Representatives from the following organizations attended at least one JEFX '02 presentation:

- *Army Chief of Staff*
- *AF Chief Scientist*
- *SAF/AQ, SAF/AQI*
- *AF/XI, XII, XIC, XIW*
- *AF/XOO, XOR, XOI, XOS, XOX*
- *NRO*
- *N6, N78*
- *IDA*
- *Local TV, DoD Publications (AF Magazine, DoD Times), Civilian Publications (St Louis Post Dispatch)*



Resulted in AFEO incorporating the use of the CVC in future JEFX marketing ConOps

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CVC Mission Areas

- Exercise and Experiment Support
- Demonstrate Emerging Technologies
- Visualizations/3-D Graphics



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Demonstrate Emerging Technologies

- **C2 Demo** - to Chief of Staff Air Force
- **ARVO** - (Augmented Reality Viewing Option)
- **3D VTC** - Teleportech-EDS
- **AFMSS Portal** - Air Force Mission Support System
- **Joint Targeting Tool Box** - (Tool set that supports joint targeting)
- **ISR-M** - Intelligence, Surveillance, Reconnaissance Manager
- **MAAP TK** - Master Air Attack Plan Tool Kit
- **ISR Warrior** - Intelligence, Surveillance, Reconnaissance tool
- **TACP** - Tactical Air Control Party Modernization Program
- **NITES** - Naval Integrated Tactical Environmental Subsystem
- **ADOCs** - Automated Deep Operations Coordination System
- **NASM/WARSIM** - (Theater Battlestaff Training)
- **OPUS** - (ATO/ACO parsing with 2-D fly-out capability)



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CVC C2 Demo

Representatives from the following organizations attended at least one C2 presentation 29 July 2003:

- CSAF
- SAF/AQ, SAF/AQI
- AF/XI, XII, XIC, XIW
- AF/XOO, XOR, XOI
- ESC/CX
- AFC2ISRC



*Resulted in CVC Selection
for future demonstrations*

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CVC Mission Areas

- **Exercise and Experiment Support**
- **Demonstrate Emerging Technologies**
- **Visualizations/3-D Graphics**



Scale Kill Munitions (SKIM)

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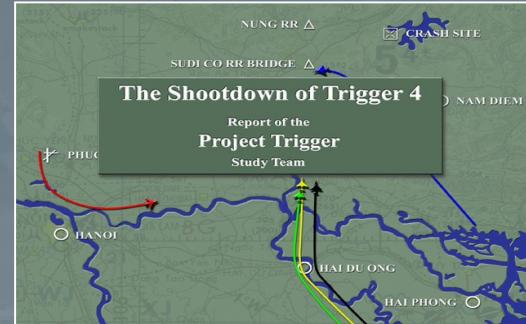
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Visualizations

ANALYSIS



Visualization for National Missile Defense



Visualization for Chief of Staff Air Force

REAL WORLD



Video for SAFAQ



Video for Secretary of Air Force



Movie Short for Secretary of Air Force

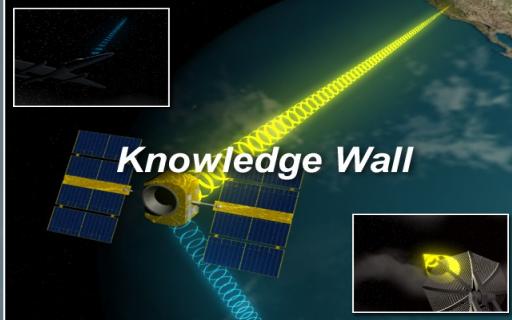
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Visualizations

CONCEPTUALIZATION



Movie Clips for AFC2 ISRC/CC

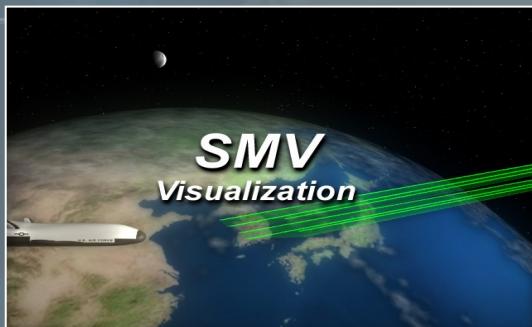


Visualization for AFEO



Visualization for AF/XO

EDUCATION



Visualization for DXOC



Video for MS&A Caucus

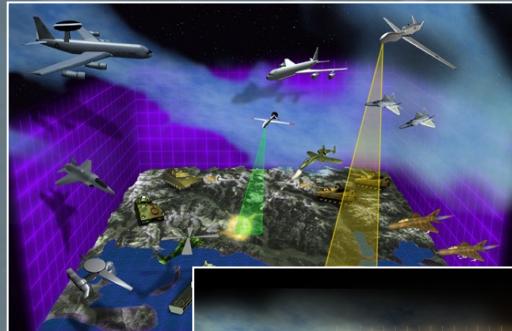


Video for AXOC

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Images for JSB Ignition Events



SBIRS image for AF/XO



*Image for NATO AWACS Detachment Commander from
Secretary of Air Force*

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Current CVC Activities

XOIRB Aerostat visualization

(PTD) Persistent Threat Detection

Visiting Battle Labs to Determine Support Potential

Space, C2, Force Protection, Information Warfare

JEFX 04 Support (19 July to 6 Aug)

First Wave Support (NATO DMO Event)

DMOC Support

HEL Sim Terrain Generation

Interservice/Industry Training, Simulation & Education Conference (I/ITS)

Theater Battle Management Core System-Unit Level (TBMCS-UL)

Pending Demo with AFC2ISRC



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DSN 693-0410
- **CVC Web Site** <http://www.cvc.hq.af.mil>
- **AFAMS Web Site** <http://www.afams.af.mil>

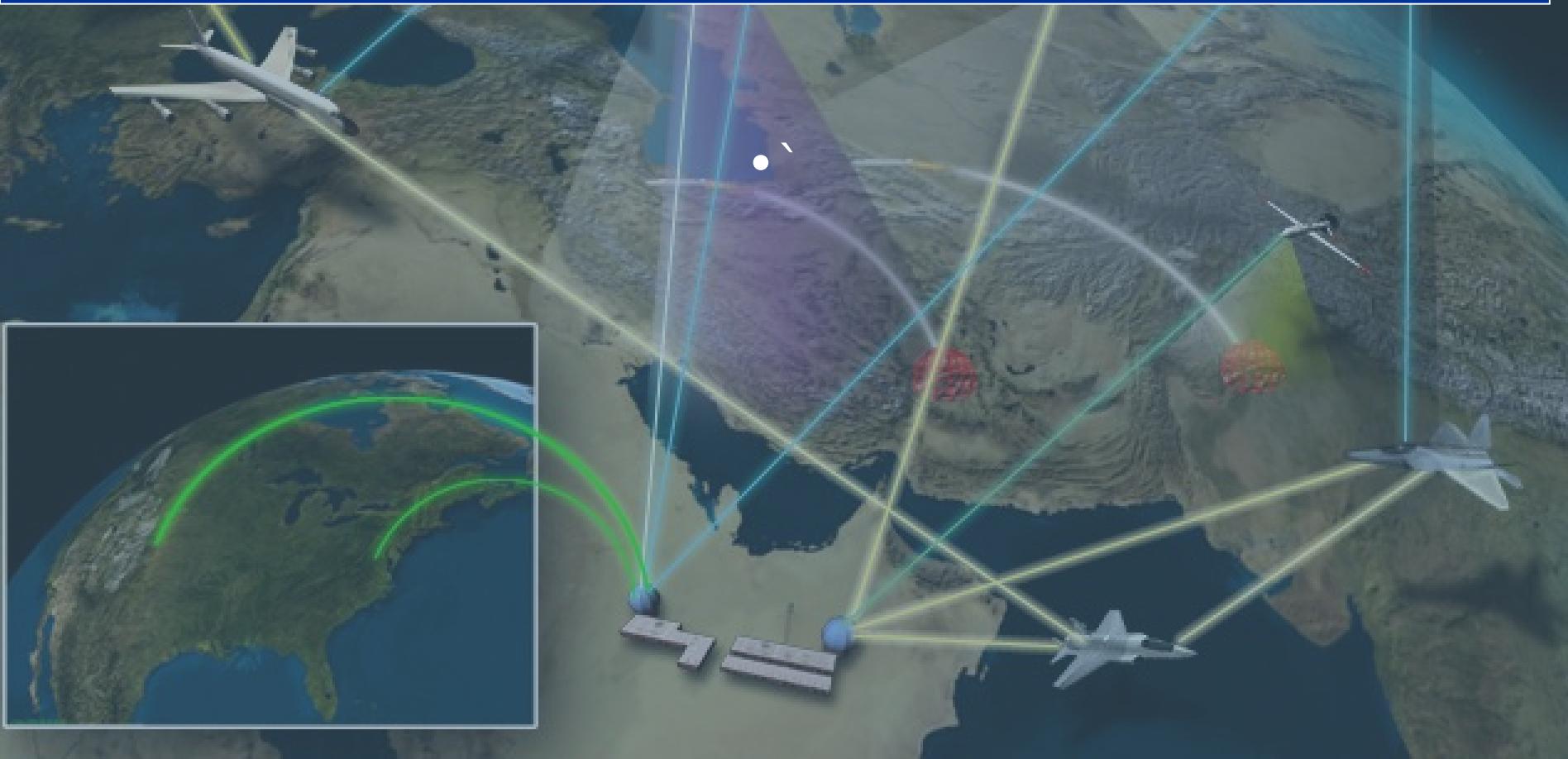
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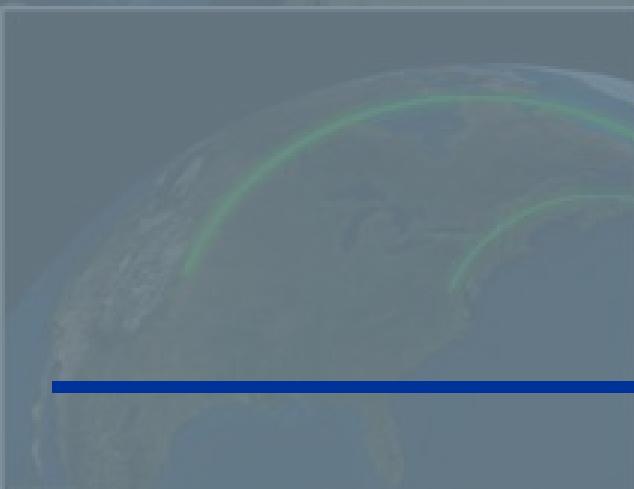
“Advancing Air Force Modeling and Simulation”
TO SUPPORT THE WARFIGHTER





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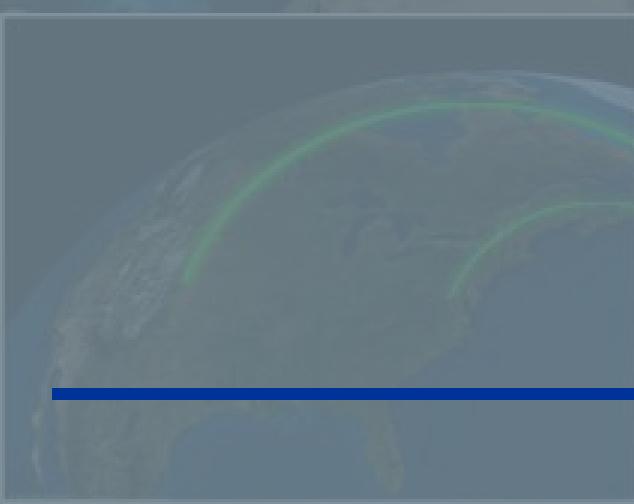
Questions





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Backup Charts



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